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CENTRAL INTELLIGENCE AGENCY

## INFORMATION REPORT

COUNTRY USSR

SUBJECT Comments and Evaluation of USSR Text Book on

Correction of Metals

25X1A

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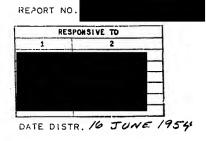
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NO. OF PAGES

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Title

Theory and Mathods of Investigating the Corresion of Metals.

Azither G.V. Akinov

Published by Izdatel'sive Akademii Nauk SSSR (1945) 414 pp

- This book is divided into three parts:
  - a. Six chapters and 219 pages deveted to the theory of corrosion. According to Akimov, the presentation is "popular" and not intended for the specialist in electrochemistry but rather for the "corrosion practitioner". Akimov states he is suphosizing electrochemical corrosion mere than chemical corrosion because of his personal interest in the former and because of the excellent coverage of the latter in Evans' book, which is available in Russian. Considerable space is given to a discussion of the interaction of various components of heterogeneous alloys. Akimov else stresses the fact that the thermodynamic possibility of a reaction is not meanly so important in corrosion work as the kinetics, that is, the rate of corrosion.
  - b. Four chapters and 159 pages on test methodo.
  - c. Twenty-one general tables pertinent to corrosion testing.
- 2. A first-rate book.
  - a. The portion of the book on testing is clearly and simply written; it should be commenced to any technician. Even someone who had never done any corrosion testing should be able, with the aid of this book, to make acceptable corrosion tests of all kinds from quick qualitative tests to highly accurate quantitative tests in addition to field and service tests.
  - b. On the other hand, the theoretical part of the book seems to be some-

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2.

what too highbrow and complicated for some of the intended researc. Akinew states the book is meant especially for technicisms and others working in industrial laboratories; the only requisite is the elementary knowledge of physics and chemistry obtained in the meant-compact in "higher technical schools". The extensive use of equations would probably intimidate someone with this training in the LEAR, sinknesse most Soviet books and authors seem to have a predilection for mathematics.

- 3. The most obvious comparison is, of course, with The Corrector Meach wit, addited by H.H. Uhlig and sponsored by The Electrochemical Society. In this intrness to Akimov, it should be mentioned that The Corrector Handbook is for 1 ager (1188 pages) and that the individual chapters were contributed by over add experts. The first part of Akimov's book (on theory) is considerably longer and more detailed than any discussion of theory in The Corrector Handbook. The second part of Akimov's book (on testing methods) and the general tables are roungly comparable to the equivalent sections of The Corrector Handbook. The loweresion Handbook, however, gives much specific data as the corrector resistance of many types of metals and alloys in all possible corresive mediums. Akimov series no attempt to give this kind of information. Akimov's book is therefore all table for the non making correcton tests but not for the engineer on declarer wanting to know what material to use for a particular application.
- 4. In the foreword, Akimov specifically states he is not giving a complete bibliography but only a few of the more important references. At the end of each chapter there is a limited list of such references, which does not always include authors to whom he has credited certain figures in the chapter. At the start of the book, he also includes a list of recommended books and magazines dealing with correction.
  - a. Because of this approach it is difficult to give a specific figure for the number of non-Soviet publications. Well over half, hevever, are in this category. For example, of the lists at the ends of the chapters, about two-thirds have non-Soviet authors. Futhermore, of the recommended magazines on correction, only three are Russian as opposed to six English, three German and two Franch.
  - Bather noteworthy is the sizeable number of Bussical translations of non-Bussian works in this field.
- 5. The treatment given to non-Soviet authors is more than fair. Not only is akimov lavish in his praise of U.R.Evans, but many non-Soviet outhors are montioned favorably by mane in the text and are given credit for figures taken from their publications. Finally, the only picture of a person included in the book is of a Swise, one of the pioneer workers in this field.
- 6. While the reproduction of the few photographs used is poor, the belonds of the 373 figures are admirably clear line drawings. There are a number of noticeable typographical errors but mainly in connection with foreign names and words that have not been transliterated.
- 7. A point of interest is the "unfortunate" lack in the USSN of any serverk of stations for testing the corresion resistance of various materials to different atmospheres, waters and soils. After a detailed description of such stations in the British Dapire and the USA, Akinov mentions the need for such work in the USSR.

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